WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS PATENT OF THE UNITED STATES IS:

1. An arrayed waveguide grating through which light travels, comprising:

at least one first optical waveguide;

a first slab waveguide;

a plurality of arrayed waveguides connected to said at least one first optical waveguide via said first slab waveguide, each of said plurality of arrayed waveguides having a different length;

a second slab waveguide;

a plurality of second optical waveguides connected to said plurality of arrayed waveguides via the second slab waveguide, at least one of said first and second slab waveguides being partitioned to first and second segments at a partition surface intersecting a path of the light; and

at least one of the first and second segments being configured to be slid along the partition surface to compensate an optical transmitting center wavelength of the light according to a temperature of the arrayed waveguide grating.

2. An arrayed waveguide grating according to claim 1, wherein a slide mechanism which is configured to slide at least one of the first and second segments along the partition surface to compensate the optical transmitting center wavelength according to the temperature is provided.

3. An arrayed waveguide grating according to claim 2, wherein the slide mechanism comprises a moving member which causes a slide motion of the at least one of the first and second segments.

4. An arrayed waveguide grating according to claim 3, wherein the moving member comprises an expanding and contracting material which is configured to expand or contract corresponding to a change in the temperature by an amount corresponding to a shift of the optical transmitting center wavelength caused by the change in the temperature.

5. An arrayed waveguide grating according to claim 3, wherein the slide mechanism further comprises a controller and a temperature sensor configured to detect the temperature of the arrayed waveguide grating, the controller controls the moving member based on the temperature detected by the temperature sensor to compensate an optical transmitting center wavelength of the light.

6. An arrayed waveguide grating according to claim 1, wherein the partition surface is substantially perpendicular to the path of the light.

7. An arrayed waveguide grating according to claim 1, wherein the partition surface is oblique to the path of the light.

8. An arrayed waveguide grating according to claim 1, wherein the light is input from one of said at least one first optical waveguide, and wherein at least one of the first and second segments is configured to be slid along the partition surface to compensate

the optical transmitting center wavelength of the light traveling through each of the plurality of second optical waveguides according to the temperature of the arrayed waveguide grating.

9. An arrayed waveguide grating according to claim 1, wherein the light is input from the plurality of second optical waveguides and wherein at least one of the first and second segments is configured to be slid along the partition surface to compensate the optical transmitting center wavelength of the light traveling through one of said at least one first optical waveguide according to the temperature of the arrayed waveguide grating.

10. An arrayed waveguide grating according to claim 1, wherein said first slab waveguide is partitioned to the first and second segments.

11. An arrayed waveguide grating according to claim 1, wherein said second slab waveguide is partitioned to the first and second segments.

12. An arrayed waveguide grating through which light travels, comprising:

at least one first optical waveguide means for transmitting the light;

a first slab waveguide means for diffracting or focusing the light;

a plurality of arrayed waveguide means for shifting phase of the light, the plurality of arrayed waveguide means being connected

to said at least one first optical waveguide means via said first slab waveguide means, each of said plurality of arrayed waveguide means having a different length;

a second slab waveguide means for focusing or diffracting the light;

a plurality of second optical waveguide means for transmitting the light, the plurality of second optical waveguide means being connected to said plurality of arrayed waveguide means via the second slab waveguide means, at least one of said first and second slab waveguide means being partitioned to first and second segments at a partition surface intersecting a path of the light; and

a slide means for sliding at least one of the first and second segments along the partition surface to compensate an optical transmitting center wavelength of the light according to a temperature of the arrayed waveguide grating.

13. A method for compensating an optical transmitting center wavelength of light which travels through an arrayed waveguide grating which includes a plurality of arrayed waveguides connecting a first slab waveguide and a second slab waveguide, the method comprising:

partitioning at least one of said first and second slab waveguides to first and second segments at a partition surface intersecting a path of the light; and

sliding at least one of the first and second segments along

the partition surface to compensate an optical transmitting center wavelength of the light according to a temperature of the arrayed waveguide grating.

14. A wavelength division multiplexing system comprising:

a MUX/DEMUX unit;

a DEMUX/MUX unit;

a communication unit including at least any one of a point-to-point element, an optical ADM element or an optical XC element; and

an arrayed waveguide grating through which light travels, the arrayed waveguide grating comprising:

at least one first optical waveguide;

a first slab waveguide;

a plurality of arrayed waveguides connected to said at least one first optical waveguide via said first slab waveguide, each of said plurality of arrayed waveguides having a different length;

a second slab waveguide;

a plurality of second optical waveguides connected to said plurality of arrayed waveguides via the second slab waveguide, at least one of said first and second slab waveguides being partitioned to first and second segments at a partition surface intersecting a path of the light; and

at least one of the first and second segments being configured to be slid along the partition surface to

compensate an optical transmitting center wavelength of the light according to a temperature of the arrayed waveguide grating.

15. An arrayed waveguide grating through which light travels, comprising:

a first slab waveguide;

a second slab waveguide;

a plurality of arrayed waveguides connecting said first slab waveguide and said second slab waveguide, each of said plurality of arrayed waveguides having a different length, at least one of said first and second slab waveguides being partitioned to first and second segments at a partition surface intersecting a path of the light; and

at least one of the first and second segments being configured to be slid along the partition surface to compensate an optical transmitting center wavelength of the light according to a temperature of the arrayed waveguide grating.